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From: John Williams (DHH-OPH) <John.Williams@LA.GOV>
Sent: Friday, September 06, 2013 8:46 AM
To: Caryn Benjamin
Cc: Jake Causey
Subject: FW: Monday Total Cl2 Distribution System Findings with Discussion

Based on a verbal from Jake Groby, yesterday around 4:00 pm, 1) the duration is 30 days minimum, 2) max free Cl delivered to the system (leaving the plant) will be 4.0 ppm, and 3) the next scheduled DPB monitoring event is scheduled for November. Im waiting on a written response. The email below is what was requested.

I expect the filter samples to be delivered sometime this morning. David Boggs will be assisting with distribution system sampling.

John

From: John Williams (DHH-OPH)
Sent: Friday, August 30, 2013 2:10 PM
To: 'Jacob Groby'
Cc: Joseph Lanclos; Hillary Nunez; Steve Lombardo; Jerry Graves, Jr.; Caryn Benjamin; Jake Causey; Amanda Laughlin; Asheka Rahman; Yoland Brumfield
Subject: RE: Monday Total Cl2 Distribution System Findings with Discussion

Mr. Groby,

I agree with St. Bernard's proposed approach to dealing with the potential of nitrification occurring out in the distribution system. Implementing a flushing and chlorine burn program is a common strategy water systems commonly use to address nitrification, or the potential for nitrification, occurring in the distribution system, storage tanks, etc.

Regarding your proposal, please provide for our review and approval the following information:

1. Anticipated duration of switch (i.e., number of days)
2. Proposed minimum and maximum dose (mg/l) at relevant points in the plant or distribution system (see below for standards).
3. Anticipated impacts on any ongoing monitoring (i.e., DPBs... does the switch occur during a monitoring event?)

I recommend that the public be notified of the change in disinfection practice. There may be taste, odor and color issues associated with changing to free chlorine as well as performing flushing. The system should also be prepared to field questions and complaints from the public. Attached is an example of "frequently asked questions" for systems that switch from chloramine to free chlorine, developed by a system located in Virginia.

Also, please be reminded that in accordance with LAC 51:XII, Section 355 (Mandatory Disinfection), the following minimum concentration of free chlorine residual shall be provided leaving the plant:

pH Value	Free Chlorine Residual
up to 7.0	0.4 mg/l
7.0 to 8.0	0.6 mg/l
8.0 to 9.0	0.8 mg/l
over 9.0	1.0 mg/l

Finally, there is a federal standard of 4 mg/L for chlorine in drinking water known as a Maximum Residual Disinfectant Level (MRDL). An MRDL is "a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. For chlorine and chloramines, a PWS is in compliance with the MRDL when the running annual average of monthly averages of samples taken in the distribution system, computed quarterly, is less than or equal to the MRDL.

Please feel free to contact me should you have any questions.

John G. Williams, P.E.
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From: Jacob Groby [<mailto:jgroby@sbpg.net>]
Sent: Friday, August 30, 2013 1:01 PM
To: John Williams (DHH-OPH)
Cc: Joseph Lanclos; Hillary Nunez; Steve Lombardo; Jerry Graves, Jr.
Subject: RE: Monday Total Cl2 Distribution System Findings with Discussion
Importance: High

Mr. Williams

In consultation with Steve Lombardo and Joseph Lanclos we feel that being proactive with this subject is the way to direct our efforts. This is email to inform you office that beginning on Tuesday Morning at 7:00am we will switch from Chloramination to feed free Chlorine by turning off the Anhydrous Ammonia. We will also further inspect our distribution system for valving conditions and begin direct flushing some of our low use areas.

I expect to have ready for your review by Sept 5th a new distribution sample site location list. This will be based on population centers and outlying regions .

Jacob B. Groby III
504-881-0265

From: John Williams (DHH-OPH) [<mailto:John.Williams@LA.GOV>]

Sent: Tuesday, August 27, 2013 3:38 PM

To: Jacob Groby

Cc: Hillary Nunez; Frank Naquin; Caryn Benjamin; Jake Causey; Amanda Laughlin; Steve Lombardo

Subject: Monday Total Cl2 Distribution System Findings with Discussion

Jake,

This email is a recap of our phone conversation this morning, along with our findings and recommendations so far. As you are aware, the areas of focus for the Total Cl2 investigation performed on Monday were Arabi and Violet. The first *naegleria fowleri* incident occurred in Arabi, in June of 2011. This second case occurred in Violet (**NOT CONFIRMED**) this month. For the first incident, the results of sampling confirmed the presence of the organism only in home plumbing. We have not received the results for the second incident; results are expected sometime next week. The results of yesterday's Total Cl2 sampling are attached.

Most of the streets selected for yesterday's monitoring had a Total Cl2 residual in the range of 0.1-0.3 mg/l. Based on the Total Cl2 residuals leaving the plant (around 3.5 mg/l), these low levels indicate that for both the Arabi and Violet subdivisions the distribution system is experiencing a significant depletion of Total Cl2 residual. Also, based on the limited sampling that was done yesterday it appears that the TCR monitoring plan does not adequately reflect the water quality of certain areas of the system. Please review the sampling locations in your TCR monitoring plan for adequate coverage. TCR sites clustered near major service lines should be avoided. We will review as well. We will need to meet later and discuss the TCR Plan, our findings and any proposed changes. When do think you will be ready to do?

Finally, the St. Bernard Water Treatment Plant chloraminates. Free ammonia associated with chloramine use can result in the promotion of biofilm out in the distribution system. Biofilms exert a demand on chlorine, which can result in reduced residuals similar to what we are seeing in Arabi and Violet. In order to ensure that chloramination is being performed efficiently at the plant, and to minimize the potential for nitrification out in the distribution system and to facilitate it's early detection, DHH developed the attached chloramination recommendations (latest version Draft Revised 04/19/2013). I strongly recommend that you review and implement the subject recommendations. An earlier version of these recommendations were provided to St. Bernard as early as July 2009 (see attached emails "090721 Email Chloramination" and "100629 Email AWWA show follow up"). It was also noted in the 2009 email that an inspection revealed that the plant was not optimized with regard to its chlorine to ammonia ratio, resulting in higher than desired levels of free available NH3 leaving the plant. Excess NH3 leaving the plant can promote biofilm, which can result in chlorine depletion out in the distribution system. Implementing and following the attached recommendations minimizes the potential for overfeeding NH3, which can result in the growth of biofilm out in the distribution system, and crashing Total Cl2 residuals.

The system needs to consider how to improve chlorine residuals in Arabi and Violet, and perhaps other areas as well. The cause of chlorine depletion needs to be determined. Switching to free chlorine for a period of time (burn out), along with flushing, are typical responses for improving chlorine residuals where nitrification has occurred. We can discuss this more when we meet regarding the TCR Monitoring Plan.

Jake, thanks for accompanying Frank Naquin yesterday on such short notice. I would also like to say that it's obvious from my dealings with you over the past 12 years that you take your profession, and the quality of St. Bernard's drinking water, very seriously.

Call me should you have any questions.

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